

CLAIMS

1. (original) A surgically implantable prosthesis designed to replace a CMC joint, which implant comprises:
a disk having a pair of convex surfaces and an axial, flaring hole which extends therethrough from surface to surface to accommodate a flexible cord that is passed through passageways in the metacarpus and the trapezium or other carpal bone, which once surgically implanted allows the metacarpus to flex relative to the trapezium or other carpal bone enough for useful hand function, with each bone sliding on the respective mating convex surface of the disk while the flexible cord conforms to the flaring surface of the axial hole in the plane of flexion.
2. (original) The implant of claim 1 wherein said disk is circular in plan view and said axial flaring opening is a section of a torus.
3. (currently amended) The implant of ~~either claim 1 or 2~~ wherein said torus has a radius of curvature which is about 15% to about 30% less than the height of said disk.
4. (currently amended) The implant of ~~any one of claims 1-3~~ claim 2 wherein the radius of curvature of transition surfaces between said toroidal surface and said convex surfaces is between about 0.7 and about 3 mm.
5. (currently amended) The implant of ~~any one of claims 1-4~~ claim 1 wherein the radii of curvature of said pair of convex surfaces are the same.
6. (original) The implant of claim 5 wherein said radius of curvature of said convex surface is at least about twice the radius of said circular disk.
7. (original) A method of repairing a deteriorated CMC joint of the thumb, which method comprises:

resecting the base of the metacarpus and the distal surface of the trapezium to provide concave surfaces which match the convex surfaces of the disk of claim 1, creating passageways in the metacarpus and the trapezium opening into said resected concave surfaces, and surgically implanting the implant of claim 1.

8. (original) The method of claim 7 which includes the step of selecting said implant to be implanted from a set of said implants of different sizes but all having substantially the same radius of curvature of said convex surfaces.

9. (original) A surgically implantable bone prosthesis designed to replace a CMC or TMT joint, which implant comprises:

a disk having a pair of convex surfaces and an axial, flaring opening which extends therethrough from convex surface to convex surface to accommodate a flexible cord that is passed through passageways created in the proximal bone of the digitus and in the trapezium or other carpal or tarsal bone, which disk once surgically implanted allows said proximal bone to flex relative to said other bone enough for useful hand or foot function, with each bone sliding on the respective mating convex surface of the disk while the flexible cord conforms to the flaring surface of the axial hole in the plane of flexion.

10. (original) The implant of claim 9 wherein said axial flaring opening is a section of a torus and said disk is circular.

11. (currently amended) The implant of ~~either claim 9 or 10~~ wherein said torus has a radius of curvature which is about 15% to about 30% less than the height of said disk.

12. (currently amended) The implant of ~~any one of claims 9-11~~ claim 10 wherein ~~the radius of curvature of~~ transition surfaces between surfaces of said torus and said convex surfaces is have a radius of curvature between about 0.7 and about 3 mm.

13. (currently amended) The ~~implants~~ implant of ~~any one of claims 9-12~~ claim 9 wherein the radii of curvature of said pair of convex surfaces are the same.

14. (original) The implant of claim 13 wherein said radius of curvature of said convex surface is at least about twice the radius of said circular disk.

15. (currently amended) A method of repairing a deteriorated CMC or TMT joint which method comprises: resecting the base of the proximal bone of the digitus and the distal surface of the carpal or tarsal bone to provide concave surfaces which match the convex surfaces of the disk of claim 9, creating passageways respectively in said bones which open into said resected concave surfaces, and surgically implanting the disk of claim 7 9.

16. (new) A method of repairing a deteriorated CMC joint of the thumb, which method comprises:

resecting the base of the metacarpus and the distal surface of the trapezium to provide concave surfaces of similar spherical curvature, and creating passageways in the metacarpus and the trapezium which will open into said resected concave surfaces,

providing a disk having a pair of convex surfaces of the same spherical curvature as said resected surfaces and an axial, flaring hole which extends therethrough from surface to surface to accommodate a flexible cord, and

surgically implanting said disk, which disk once surgically implanted allows the metacarpus to flex relative to the trapezium enough for useful hand function.

17. (new) The method of claim 16 which includes the step of selecting said disk to be implanted from a set of disks of different sizes but all having substantially the same radius of curvature of said convex surfaces.

18. (new) The method of claim 16, which includes the step of passing a flexible cord through the passageway created in the metacarpus, the flaring axial opening and the passageway created in the trapezium so that the flexible cord conforms to the

flaring surface of the axial hole in the plane of flexion when each bone slides on the respective mating convex surface of the disk.

19. (new) The method of claim 18 wherein said flexible chord is a harvested tendon.

20. (new) The method of claim 19 wherein said tendon is harvested from the vicinity of the CMC joint where it remains attached and the free end is passed through said passageways and tied off or knotted.